FOREST STATISTICS REVIEW 1978 - 79

Alberta

ENERGY AND NATURAL RESOURCES

Forest Service

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1978 - 79
(REVISED)

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NATURAL RESOURCES
FOREST SERVICE

ENR Technical Report Number: T/14-79 (REVISED)
International Standard Book Number: 0-86499-025-1

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FOREWORD

This report presents statistical detail pertaining to the activities of the Alberta Forest Service during the 1978-79 fiscal year. Summary tables are provided for comparative analysis and observations of trends. Industrial statistics are provided where they are helpful in obtaining a total provincial overview.

ACKNOWLEDGEMENTS

Tabular and graphic materials in this report were compiled by the respective branches of the Alberta Forest Service. Although monitoring of industrial reforestation activities is the responsibility of the Timber Management Branch, tabular data has been included in the Reforestation section of the report to provide a total reforestation overview.

A. TIMBER MANAGEMENT

1. Introduction

Total timber production, exclusive of wood chips, during the 1978-79 fiscal year was 4 672 428 m^3. A total of 310 579 Bone Dry Units (B.D.U.) of wood chips was also produced.

2. Timber Management Planning

a) FOREST MANAGEMENT (F.M.) AGREEMENT AREA PLANNING – ACTIVE OPERATIONS

F.M. Agreement Holder	Coniferous Annual Allowable Cut (A.A.C.) – (Thousands of Cubic Metres)	Management Plan Status
St. Regis (Alberta) Ltd.	1 052	Second Detailed F.M. Plan Approved in 1979
Simpson Timber Co. (Alberta) Ltd. Blue Ridge, Alberta	373	Preliminary F.M. Plan Approved January 17/78
Procter & Gamble of Canada Ltd. Grande Prairie, Alberta	1 272	Detailed F.M. Plan Approved January 17/78
North Canadian Forest Industries Ltd., Grande Prairie, Alberta	199	Detailed F.M. Plan due by January 5/81
North Canadian Forest Industries Ltd. (Dell Acres) Hines Creek, Alberta	7	Detailed F.M. Plan Approved October 1/75
TOTAL	**2 903**	

b) CONIFEROUS TIMBER QUOTA PLANNING

Table A1
CURRENT CONIFEROUS TIMBER QUOTA STATUS
(as of March 31, 1979)

Forest	Number of Quotas	Authorized Annual Allowable Cut (Thousands of Cubic Metres)
Athabasca	8	163
Bow/Crow	15	239
Edson	12	326
Footner Lake	10	421
Grande Prairie	1	62
Lac La Biche	6	83
Peace River	8	219
Rocky/Clearwater	29	163
Slave Lake	30	547
Whitecourt	14	276
TOTALS	**133**	**2 499**

Table A2
DECIDUOUS TIMBER ALLOCATION (D.T.A.) STATUS
(as of March 31, 1979)

Forest	Number of D.T.A. s	Authorized Annual Allowable Cut (Hectares)
Rocky Clearwater	2	696

3. Woods Operations

During 1978-79, field staff approved and/or checked:

Quota Timber Licence Annual Operating Plans (A.O.P.)	– 282
Quota Woods Inspections on above Licences	– 731
Commercial Timber Permit Annual Operating Plans	– 94
Woods Inspections on Above Permits	– 127

Additional operations and inspections were carried out on four Forest Management Agreement Areas. These include: St. Regis (Alberta) Ltd., North Canadian Forest Industries Ltd., Procter & Gamble of Canada Ltd. and Simpson Timber Co. (Alberta) Ltd. These industries accounted for an additional:

Annual Operating Plans	– 7	Total A.O.P.s	383
Woods Inspections	– 395	Total Inspections	1 253

4. Scaling

The volume of weight scale sample loads of logs check-scaled by the Forest Service amounted to 20 465 cubic metres of sawlogs and 3 835 cubic metres of roundwood.

During the year, 116 scaling permits and 25 scaling licences were issued.

5. Timber Audits

A total of 30 audits of volume, including quadrant cut-offs for two quotas, were completed during the year.

Table A3
TIMBER DISPOSITIONS HANDLED

Disposition	Class	Granted	Sold	Not Sold	Total
Coniferous Timber Quota		–	–	–	–
Licences	Coniferous Quota	36	–	–	36
Commercial Timber Permits	Coniferous - Green	1	20	–	21
	Coniferous - Dead and Damaged	–	5	–	5
	Deciduous - Green	–	–	–	–
Local Timber Permits		1	1 852	–	1 853
Tree Tags		–	24 990	–	24 990
Custom Sawmill, Planer Mill or Timber Treating or Processing Plant Permits – Number		–	52	–	52

Sixteen timber advertisements publicized a total of 14 public auctions and or draws. These auctions and draws were conducted in various forests throughout the province covering local timber permits (L.T.P.) draws, materials from seizures and thinning or salvage operations. In addition, major coverage was provided for invitation for proposals on the Berland/Fox Creek timber development areas.

Table A4
SUMMARY OF TIMBER OPERATIONS ON PUBLIC LANDS

		Forest Management Agreement Areas, Timber Licences and Commercial Permits	Local Timber Permits and Tags	Total
Number of Active Timber Dispositions		391	26 842	27 233
Lumber and Plywood Logs	Coniferous - Cubic Metres	2 733 687	202 597	2 936 284
	Deciduous - Cubic Metres	6 127	18 866	24 993
Round Timber	Coniferous - Cubic Metres	45 434	35 783	81 217
	Deciduous - Cubic Metres	–	401	401
Pulpwood	Coniferous - Cubic Metres	1 512 259	32 819	1 545 078
	Deciduous - Cubic Metres	–	2 035	2 035
Wood Chips	Bone Dry Units	310 579	–	310 579
Fuelwood	Coniferous - Cubic Metres	1 288	40 676	41 964
	Deciduous - Cubic Metres	–	18 134	18 134
Slabs	Coniferous - Cubic Metres	319	–	319
Railway Ties	Coniferous - Cubic Metres	21 702	–	21 702
Lath	Coniferous - Cubic Metres	32	269	301
Christmas Trees	Number	–	30 727	30 727
Trees for Transplanting	Number	–	61 377	61 377

Production from other lands not included in above table:

Metis Colonies	32 740 Cubic Metres of Lumber
Federal Parks	124 411 Cubic Metres of Lumber

Table A5
VOLUME AND VALUE OF TIMBER PRODUCTION ON PUBLIC LANDS

Product	Volume	Unit	Unit Price – $	Value – $
Lumber – Coniferous	2 936 284	Cubic metres	$ 47.93	$140 736 092
Lumber – Deciduous	24 993	Cubic metres	20.97	524 103
Round Timber	81 618	Cubic metres	47.67	3 890 730
Pulpwood	1 547 113	Cubic metres	12.67	19 601 922
Wood Chips	310 579	Bone Dry Units	36.00	11 180 844
Fuelwood	60 098	Cubic metres	12.46	748 821
Slabs	319	Cubic metres	10.39	3 314
Railway Ties	21 702	Cubic metres	56.87	1 234 193
Lath	301	Cubic metres	134.09	40 361
Christmas Trees	30 727	Number	3.00	92 181
Transplants	61 377	Number	2.00	122 754
TOTAL ($)				$178 175 315

Table A6
TIMBER PRODUCTS FOR TEN-YEAR PERIOD
1969-1979

Year	Number Licences Commercial Timber Permits	Number of Miscellaneous and Local Timber Permits and Tags	Coniferous Lumber, Plywood Logs, M. Cubic Metres	Deciduous Lumber M. Cubic Metres	Round Timber Cubic Metres	Pulpwood M. Cubic Metres	Wood Chips M. Bone Dry Units	Fuelwood, Slabs Cubic Metres	Railway Ties Cubic Metres	Lath Cubic Metres	Number Christmas Trees	Number Trees For Transplants	TOTAL* M. Cubic Metres
1969-70	585	2 663	2 150	8	56 640	859	—	7 221	45 288	1 727	9 929	4 244	3 128
1970-71	541	1 971	2 193	4	84 960	676	—	9 628	44 252	1 564	15 283	211	3 014
1971-72	548	1 825	2 288	51	56 640	763	—	12 035	31 820	1 389	16 908	1 322	3 204
1972-73	633	2 881	2 700	86	84 960	1 006	21	19 256	28 120	1 434	17 580	5 141	3 925
1973-74	495	4 086	2 932	47	84 960	1 906	117	9 628	14 652	1 294	7 820	2 441	4 996
1974-75	522	13 199	1 704	51	141 600	2 212	85	12 035	33 744	887	16 737	16 201	4 156
1975-76	486	15 476	2 142	26	84 960	1 731	57	12 035	48 396	606	18 367	27 050	4 045
1976-77	456	15 282	2 579	30	169 920	1 581	112	50 547	35 224	—	17 702	37 644	4 446
1977-78	475	19 572	2 884	13	226 560	1 651	190	48 140	27 528	1 319	23 902	28 507	4 852
1978-79	391	26 842	2 936	25	81 618	1 547	311	60 417	21 702	301	30 727	61 377	4 672

*Excludes wood chips, christmas trees and transplants

B. REFORESTATION AND RECLAMATION

1. Introduction

This branch is responsible for all Alberta Forest Service reforestation and reclamation projects, the forest genetic and stand improvement program and the Pine Ridge Forest Nursery. The branch is also deeply committed to the Alberta Oil Sands Environmental Research Program.

The Reclamation section was involved with work on 144 different sites. Funding came from the Alberta Heritage Savings Trust Fund, the federal government and Alberta government departmental budgets. Experimental plots, using various native and cultivated grasses and legume species, were established on overburden of the abandoned high-altitude Cadomin coal mine. Evaluation of the use of native and exotic trees and shrubs for oil sands revegetation showed some problems related to small mammals.

The Pine Ridge Forest Nursery neared completion. The water supply system became operational. The maintenance service building, warehouse facilities and shade frames became operational. Construction was completed on the seed extraction plant. After testing, the plant processed 16 101.8 hL of pine cones and 891.8 hL of spruce cones. The seed cold storage facility was completed. The soil mixing, filling and seed line, developed by the Alberta Forest Service, was installed; it has a capacity of over one million container cavities per day.

During July, the first container seedlings were shipped. The bareroot crop planted in 1977 was supplemented with the sowing of 5.7 million seedlings in 1978. The first bareroot planting stock is expected to be ready for 1980.

The genetic and stand improvement program was expanded with the addition of a laboratory and greenhouse. Present stock consists of 80 000 seedlings and 641 grafts.

The program selection of superior trees continued, reaching a total of 972 trees selected, most of which are lodgepole pine. A total of 477 seedlets are in experimental use. Work commenced on the controlled pollination of larches and 69 crosses were done to develop material of known pedigree for field evaluation. Siberian larch and tamarack field trials were established. The efforts of fertilization on seed production and quality are also being studied.

Reforestation success showed a sharp increase, partly due to the intensive survey training and certification program. Regeneration surveys showed an overall 79% success rate for stocked areas. This compares to 40% from previous years. The total area scarified by the Forest Service amounted to 10 152 ha with two million seedlings planted and 4 654 ha seeded.

A major equipment development was the precision seeder, designed for a Bell 206 Jet Ranger helicopter. It has a capacity of 136.08 kg of seed and can seed 0.34 kg/ha at over 160 km/h.

The "Maintaining Our Forest" program will commence April 1, 1979 with a grant of $25 million from the Alberta Heritage Savings Trust Fund. This program will involve reforestation of potentially productive lands, wetland improvement and tree and stand improvement.

Reforestation work is summarized on the six tables following.

Table B1
REGENERATION SURVEYS

Forest	ALBERTA FOREST SERVICE			INDUSTRY			
	Stocked (Hectares)	Non-stocked (Hectares)	Total Surveyed (Hectares)	Stocked (Hectares)	Non-stocked (Hectares)	Total Surveyed (Hectares)	GRAND TOTAL (Hectares)
Athabasca	222	23	245	296	338	634	879
Bow/Crow	1 454	206	1 660	364	216	580	2 240
Edson	898	187	1 085	53	15	68	1 153
Footner Lake	2 240	122	2 362	1 997	1 419	3 416	5 778
Grande Prairie	950	481	1 431	2 122	393	2 515	3 946
Lac La Biche	479	342	821	110	40	150	971
Peace River	444	540	984	902	1 787	2 689	3 673
Rocky/Clearwater	449	287	736	222	292	514	1 250
Slave Lake	1 640	468	2 108	1 444	851	2 295	4 403
Whitecourt	1 495	40	1 535	1 448	802	2 250	3 785
TOTAL	10 271	2 696	12 967	8 958	6 153	15 111	28 078

Table B2
TEN-YEAR SUMMARY — REGENERATION SURVEYS
1969-79

Year	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (Hectares)
	Stocked (Hectares)	Non-stocked (Hectares)	Total Surveyed (Hectares)	Stocked (Hectares)	Non-stocked (Hectares)	Total Surveyed (Hectares)	
1969-70	219	2 187	2 406	2 718	1 092	3 810	6 216
1970-71	6 848	9 602	16 450	4 916	2 405	7 321	23 772
1971-72	11 502	5 509	17 011	3 034	959	3 993	21 004
1972-73	6 187	7 846	14 033	5 853	5 556	11 409	25 443
1973-74	10 422	15 281	25 703	9 669	7 391	17 060	42 763
1974-75	6 541	3 404	9 945	10 113	7 495	17 608	27 553
1975-76	12 750	6 091	18 841	10 788	5 401	16 189	35 030
1976-77	11 055	6 226	17 281	8 715	8 297	17 012	34 293
1977-78	10 114	8 841	18 955	7 295	9 702	16 997	35 952
1978-79	10 271	2 696	12 967	8 958	6 153	15 111	28 078

Table B3

REFORESTATION WORK CONDUCTED BY THE ALBERTA FOREST SERVICE

Forest	Scarification (Hectares)	Seeding (Hectares)	Cones Collected			Thinning (Hectares)	Seedlings Planted		Prescribed Burn (Hectares)
			Pine (Hectolitres)	Spruce (Hectolitres)	Other (Hectolitres)		Conventional (Number)	Container (Number)	
Athabasca	– – –	– – –	– – –	– – –	– – –	– – –	– – –	– – –	– – –
Bow/Crow	761	653	1 481	– – –	– – –	– – –	22 800	154 733	– – –
Clearwater/Rocky	533	227	3 415	18	– – –	– – –	– – –	209 700	– – –
Edson	342	197	43	– – –	– – –	4	9 250	15 750	4
Footner Lake	1 658	9	– – –	135	– – –	– – –	– – –	306 796	4
Grande Prairie	687	687	1 174	– – –	– – –	– – –	62 068	536 866	– – –
Lac La Biche	1 663	6	16	6	– – –	– – –	– – –	64 000	– – –
Peace River	872	707	– – –	– – –	– – –	– – –	– – –	260 000	– – –
Slave Lake	2 275	1 688	2 468	17	– – –	– – –	– – –	506 040	– – –
Whitecourt	1 361	480	1 747	– – –	– – –	7	– – –	– – –	– – –
TOTAL	**10 152**	**4 654**	**10 344**	**176**		**11**	**94 118**	**2 053 885**	**8**

One hectolitre of spruce cones yields approximately 1.168 kg of seed and one hectolitre of pine cones yields about 0.312 kg of seed.

Table B4
REFORESTATION BY FOREST INDUSTRIES IN ALBERTA

Forest	Scarification (Hectares)	Seeding (Hectares)	Seed Extracted Pine (Kilograms)	Seed Extracted Spruce (Kilograms)	Controlled Burning (Hectares)	Thinning (Hectares)	Seedlings Planted Conventional (Number)	Seedlings Planted Container (Number)
Athabasca	9	—	—	—	—	—	—	—
Bow/Crow	134	47	55	—	—	—	—	265 907
Edson	488	—	135	—	4	148	—	1 943 475
Footner Lake	1 059	103	2	513	—	—	—	268 647
Grande Prairie	740	464	504	—	—	—	44 500	2 435 000
Lac La Biche	—	28	1	—	—	—	—	—
Peace River	964	639	149	—	—	—	—	391 000
Rocky/Clearwater	140	145	23	—	—	—	—	144 900
Slave Lake	799	179	235	7	—	—	—	439 900
Whitecourt	1 619	85	90	—	—	—	—	275 750
TOTAL	**5 952**	**1 690**	**1 194**	**520**	**4**	**148**	**44 500**	**6 164 579**

Table B5

TEN YEAR SUMMARY – REFORESTATION BY THE ALBERTA FOREST SERVICE
1969-79

Year	Scarification (Hectares)	Seeding (Hectares)	Thinning (Hectares)	Seedlings Planted	
				Conventional	Container
1969-70	4 893	4 219	1 117	666 619	672 584
1970-71	6 685	3 788	2 041	1 248 693	384 500
1971-72	7 243	5 385	1 374	1 655 486	513 012
1972-73	6 979	4 701	100	333 412	1 127 373
1973-74	6 594	1 332	108	*1 228 392	1 334 588
1974-75	6 296	2 047	72	**1 140 705	1 224 396
1975-76	6 697	1 885	104	*** 943 702	3 514 664
1976-77	4 757	2 898	546	**** 827 520	2 294 659
1977-78	6 684	4 782	111	224 478	2 378 730
1978-79	10 152	4 654	11	94 118	2 053 885

* Includes 50 800 wildlings planted

** Includes 26 000 wildlings planted

*** Includes 82 032 wildlings planted

**** Includes 137 776 wildlings planted

Table B6

TEN YEAR SUMMARY – REFORESTATION BY FOREST INDUSTRIES

1969-79

Year	Scarification (Hectares)	Seeding (Hectares)	Thinning (Hectares)	Seedlings Planted	
				Conventional (Number)	Container (Number)
1969-70	4 222	––	62	––	1 637 700
1970-71	6 218	––	20	3 000	1 307 000
1971-72	5 452	217	––	––	643 657
1972-73	5 501	1 745	––	40 000	929 244
1973-74	6 793	1 939	––	*64 070	957 594
1974-75	6 334	2 313	––	**140 462	3 124 239
1975-76	10 840	2 862	40	1 329 364	1 732 820
1976-77	9 849	3 427	37	103 675	3 284 978
1977-78	10 292	5 328	20	––	4 253 860
1978-79	5 952	1 690	148	44 500	6 164 579

* Includes 8 500 wildlings planted

** Includes 3 000 wildlings planted

C. LAND USE

1. Introduction

The following information pertains to forest land use activities of the Alberta Forest Service.

2. Grazing

Grazing in the Forest Reserves decreased 1 501 animal unit months (A.U.M.) to 74 202 A.U.M. in 1978-79. Grazing revenue from 111 permits on 94 allotments was $80 807. In addition, 221 668 ha of grazing lands were managed on other forested lands within the Green Zone.

3. Petroleum and Natural Gas Industry

The increased use of forest lands by the petroleum and natural gas industry was evidenced by a 15% increase in applications processed for land surface rights. Table C1 shows the applications processed by forest, for the last four years.

Table C1
APPLICATIONS PROCESSED FOR LAND SURFACE RIGHTS FOR THE PETROLEUM AND NATURAL GAS INDUSTRY

Forest	1978-79	1977-78	1976-77	1975-76
Athabasca	60	47	105	60
Bow/Crow	128	81	84	99
Edson	128	167	223	149
Footner Lake	287	259	413	236
Grande Prairie	338	196	89	40
Lac La Biche	428	363	380	272
Peace River	320	351	442	413
Rocky/Clearwater	283	266	190	215
Slave Lake	491	413	386	309
Whitecourt	655	485	376	289
TOTAL	3 118	2 628	2 688	2 082

In addition, 1 424 amendments, 241 Sand and Gravel Dispositions, 196 Miscellaneous Permits and Leases, and 60 Specific Use Reservations were approved. Numerous holdings, land use restrictions and administrative reservations were also processed.

Timber Damage Assessments on Land Dispositions — timber damage assessments were computed on 1 850 dispositions in 1978-79.

4. Geophysical

The timber damage assessment rate for new clearing in the Green Area remained at $40.18 per hectare. The rate for re-use of existing line remained at $20.09 per hectare. These rates are established by the Timber Management Branch and are directly related to the average rate of timber dues for the previous year.

Table C2
EXPLORATION ACTIVITY FOR OIL AND GAS ON PUBLIC FOREST LANDS
1972-79 GEOPHYSICAL APPLICATIONS

Year	Preliminary Plans Approved	Number of Lines (Kilometres Cut)	Number of Existing Lin (Kilometres Used)
1972-73	273	3 605	3 513
1973-74	401	3 953	4 365
1974-75	205	2 554	2 541
1975-76	325	2 148	3 714
1976-77	387	5 786	5 641
1977-78	639	9 551	9 310
1978-79	743	11 076	10 796

Seismic activity again increased considerably over the previous year. All crews in the province were working to full capacity.

5. Revenue

Timber damage assessments, forest protection levies and Crown dues amounted to approximately $ 451 338.00.

6. Recreation

A total of $ 135 469.00 was spent on contruction of new recreation areas and facilities. This was broken down as follows:

Existing Areas—expansion, improvements, project completion		$ 87 627.00
New Projects—		
Masqua Lake (Athabasca)	$ 10 471.00	
Two Lakes (Grande Prairie)	$ 37 371.00	

In co-operation with the Resource Evaluation and Planning Branch, recreation inventories were conducted in the following areas—

1. Cold Lake Study Area
2. Highwood-Sheep Study Area
3. Livingstone-Porcupine Hills Study Area
4. Ghost Study Area

The cost of these studies was $ 25 688.00.

River inventories were conducted on the Clearwater, Athabasca and Little Smoky Rivers at a cost of $ 4 376.00.

FOREST RECREATION AREAS

The forested areas of Alberta offer a variety of recreational opportunities. The Forest Service provides rustic facilities for the convenience of individuals seeking recreational enjoyment in the forest environment.

Accommodations include back-in stalls for tents and drive-through stalls for trailers, with truck camper and tent trailer facilities in both types of unit. Stalls include picnic tables and fireplaces. Drinking water is available at nearby pumps, toilets are of the pit privy type, and firewood is supplied. Individual unit services or hook-ups are not available.

For management purposes, the recreation areas have been classified as follows:

CLASS I RECREATION AREAS. Formally developed, and can include separate picnic, tent, or trailer sections. A minimum of 25 family camping units are accommodated. The water source is one or more drilled wells.

CLASS II RECREATION AREAS: Less formally developed, without segregation of picnic, tent or trailer units. A minimum of 10 camping units are provided. Water source is a drilled well.

CLASS III RECREATION AREAS: Partially developed areas (as in class II) with a capacity of fewer than 10 family camping units. Group camps are included in this class and are available to organized groups on a reservation basis.

CLASS IV RECREATION AREAS: Undeveloped. Includes areas which have less than the minimum basic facilities required in the other classes. Lacks formal road systems, developed water, and identifying signs.

Table C3
NUMBER OF RECREATION AREAS BY CLASS AND FOREST

Forest	Class I	Class II	Class III	Class IV	Total
Athabasca	0	1	5	2	8
Bow/Crow	15	12	22	18	67
Edson	6	6	4	37	53
Footner Lake	0	2	3	18	23
Grande Prairie	3	1	5	1	10
Lac La Biche	2	1	2	8	13
Peace River	0	2	1	8	11
Rocky/Clearwater	6	12	12	21	51
Slave Lake	0	2	1	8	11
Whitecourt	3	3	0	37	43
TOTAL	35	42	55	158	290

Table C4

LIST OF FOREST RECREATION AREAS BY NAME, LOCATION, AND FACILITIES AVAILABLE (CLASS I, II, III)

Forest	Recreation Area	Picnic	Tent	Trailer	Overflow	Boat Launch	Location
Athabasca							
	Cascade Rapids		8				68 km. E. of Fort McMurray
	Dore Lake	13					10 km. N.W. of Fort Chipewyan
	Engstrom		4				48 km. E. of Fort McMurray
	Maqua Lake	13	16				39 km. S. of Fort McMurray
	Miseieutin		4				29 km. E. of Fort McMurray
	Whitemud Falls		4				80 km. E. of Fort McMurray
Bow/Crow							
	Allison	10	9	8			3 km. N. & 5 km. W. of Coleman
	Beaver Creek						48 km. N. of Cowley
	Beaver Flats	20	10	9			27 km. S.W. of Bragg Creek
	Beaver Mines Lake	20	47	7	9	X	5 km. E. & 22 km. N. of Bellevue
	Beaver Ponds	20					24 km. S. of Seebe
	Bluerock	10	13				14 km. S. & 32 km. W. of Turner Valley
	Burnt Timber	10	10	8			87 km. N.W. of Cochrane
	Castle Falls	25	13	15			16 km. S.E. of Burmis
	Castle River Bridge	10	15	11			32 km. S. of Blairmore
	Canyon Creek				5		19 km. S.W. of Bragg Creek
	Cataract Creek	20	61				98 km. N. of Coleman
	Cat Creek	7	10	13			58 km. S.W. of Longview
	Chinook	10	20	11		X	5 km. W. & 5 km. N. of Coleman
	Deer Creek	10					45 km. W. of Sundre
	Dutch Creek	10	14	8			43 km. N. of Coleman
	Eau Claire	11		22			35 km. S.W. of Seebe
	Elbow Bridge	20					10 km. S.W. of Bragg Creek
	Elbow Falls	34					21 km. S.W. of Bragg Creek
	Evans Thomas	40	34	25			27 km. S.W. of Seebe
	Gooseberry	18	19	9	10		6 km. S.W. of Bragg Creek
	Gorge Creek				10		30 km. W. of Turner Valley
	Highwood No. 3				6		40 km. S.W. of Longview
	Indian Grave	4	16	12			90 km. N. of Coleman
	James Wilson	15	5	10	10		53 km. W. of Sundre
	Johnston Creek				10		88 km. N. of Coleman
	Livingstone Falls	10	12	4			71 km. N. of Coleman
	Loomis Creek						67 km. S.W. of Longview

Table C4 continued

Forest	Recreation Area	Picnic	Tent	Trailer	Overflow	Boat Launch	Location
	Lynx Creek	10	10	6			18 km. S.W. of Frank
	McLean Creek	29					8 km. S.W. of Bragg Creek
	North Fork	10	20	4			24 km. N.W. of Turner Valley
	North Ghost	8	11	82			64 km. N.W. of Cochrane
	Oldman River	10	18				50 km. N. of Coleman
	Racehorse	13	13	6			234 km. N. of Coleman
	Red Deer River	35	18	48			55 km. W. of Sundre
	Ribbon Creek						21 km. S. of Seebe
	Sandy McNabb	5		31	4		24 km. W. of Turner Valley
	Sheep Falls	2					34 km. W. of Turner Valley
	Sibbald Flat	20	32	64	10		24 km. S.E. of Seebe
	Waiparous Creek	10	18	18	10		59 km. N.W. of Cochrane
	Wildhorse	6					59 km. W. of Sundre
Edson							
	Big Berland	4	25				70 km. N.W. of Hinton
	Cardinal River		38	22			52 km. S. & 39 km. E. of Hinton
	Cardinal River Vwpt.	2					3 km. S. of Mountain Park
	Emerson Lakes	8	7				48 km. N.W. of Edson
	Fairfax Lake	7				X	104 km. S. of Edson
	Fickle Lake	4	7			X	39 km. S.W. of Edson
	Forks	5	20				109 km. S. of Edson
	Hay River	4	4	2			39 km. N.W. of Hinton
	Kinky Lake	2		3		X	27 km. S.W. of Hinton
	McLeod River	1	9	7			26 km. S.E. of Hinton
	Muskeg	7	7				100 km. S.E. of Hinton
	Pembina Forks	5	20				61 km. S. of Edson
	Pierre Grey's Lakes	3	33	40		X	93 km. N.W. of Hinton
	Rock Lake	4	14	26		X	42 km. N.W. of Hinton
	Watson Creek		14	11			112 km. S. of Edson
	Whitehorse Creek		15				122 km. S. of Edson
	Wildhorse Lake			5		X	27 km. S.W. of Hinton
Footner							
	Buffalo Tower	3					29 km. S. of La Crete
	Buffalo River	2	6				21 km. S. S.W. of Rainbow Lake
	Hutch Lake	13		2		X	23 km. N. & 13 km. W. of High Level
	Rainbow Lake	2	12	1		X	24 km. S. of Rainbow Lake
	Thurston Lake	*	*				193 km. N. of High Level (air access only)

* Primitive facilities provided.

Table C4 continued

Forest	Recreation Area	Picnic	Tent	Trailer	Overflow	Boat Launch	Location
Grande Prairie							
	Bison Flats						87 km. S. of Grande Prairie
	Cutbank River	4					80 km. S. of Grande Prairie
	Economy Lake	4	4				32 km. S. of Grande Prairie
	Musreau Lake		64	19			80 km. S. of Grande Prairie
	Pinto Creek	2					74 km. S.W. of Grande Prairie
	Shuttler Flats	3					100 km. S.W. of Grande Prairie
	Simonette River	20	26				11 km. W. & 8 km. S. of Debolt
	Two Lakes		26	10		X	89 km. S. & 48 km. W. of Grande Prairie
	Westview						109 km. S. of Grande Prairie
Lac La Biche							
	Calling River						77 km. N.W. of Lac La Biche
	La Biche River						90 km. N.W. of Lac La Biche
	Seibert Lake	10	17	17		X	45 km. N. & 32 km. W. of Bonnyville
	Touchwood Lake	7	24	8		X	35 km. E. & 11 km. N. of Lac La Biche
	Wolf Lake	9	10	14		X	40 km. N. & 16 km. W. of Bonnyville
Peace River							
	Notikewin						58 km. N. of Hines Creek
	Running Lake		33	10		X	52 km. N. & 29 km. W. of Hines Creek
	Sulphur Lake	8	10				58 km. N. & 32 km. W. of Hines Creek
Rocky/ Clearwater							
	Blackstone	3	4	1			15 mi. N. of Nordegg
	Blackstone Vwpt.						30 km. N. of Nordegg
	Brazeau River		6	6			63 km. N. of Nordegg
	Brazeau Reservoir	30	8	30			48 km. S.W. of Drayton Valley
	Brown Creek	6	6	2			40 km. N. of Nordegg
	Brown Creek Vwpt.						45 km. N. of Nordegg
	Chambers Creek		14	1			40 km. W. of Rocky Mountain House
	Crescent Falls	5					19 km. W. of Nordegg
	Elk Creek	1	9	5			45 km. S. of Nordegg
	Elk River	3	5	8			45 km. N. of Nordegg

Table C4 continued

Forest	Recreation Area	Picnic	Tent	Trailer	Overflow	Boat Launch	Location
	Fish Lake	10	46	52		X	3 km. W. of Nordegg
	Goldeye Lake		11	9		X	7 km. W. of Nordegg
	Harlech		6	1			10 km. E. of Nordegg
	Haven Creek		8				10 km. W. of Nordegg
	Jack Fish Lake		4				59 km. W. of Rocky Mountain House
	Kootenay Plains		26	1			64 km. W. of Nordegg
	Medicine Lake	10	5	28			37 km. N.W. of Rimbey
	Mitchell Lake	4				X	29 km. S. of Rocky Mountain House
	North Ram River	5	10	10			29 km. S. of Nordegg
	Peppers Lake	1	11	9			19 km. S. & 45 km. W. of Rocky Mountain House
	Phyllis Lake	4					45 km. S. of Rocky Mountain House
	Prairie Creek	5	10	25			32 km. S.W. of Rocky Mountain House
	Ram Falls	50	30	47			73 km. N.W. of Ricinus
	Seven Mile		20	18			66 km. N.W. of Ricinus
	Shunda Beaverdam	10	7				3 km. E. of Nordegg
	Shunda Vwpt.	5					72 km. W. of Rocky Mountain House
	Strachan	14	12	11			19 km. S.W. of Rocky Mountain House
	Stuble Lake						30 km. S. of Rocky Mountain House
	Swan Lake		16			X	32 km. N.W. of Ricinus
	Thompson Creek	5	18	37			87 km. S.W. of Nordegg
	Upper Shunda Creek	10	10	10			3 km. N.W. of Nordegg
Slave Lake							
	Fawcett Lake	2	5	10	1	X	13 km. N. & 58 km. E. of Slave Lake
	North Wabasca		10	8	9	X	142 km. N. of Slave Lake
	Peerless Lake	1	17	2		X	8 km. S. of Peerless Lake Townsite
Whitecourt							
	Carson Lake		19	28		X	24 km. N. of Whitecourt
	Goose Lake	3	9			X	26 km. N. & 39 km. E. of
	Iosegun Lake	9	12	18		X	11 km. N. of Fox Creek
	Smoke Lake	12	8	14		X	13 km. S.W. of Fox Creek

Table C4 continued

Forest	Recreation Area	Picnic	Tent	Trailer	Overflow	Boat Launch	Location
	Swan Hills		9	1			8 km. W. of Swan Hills
	Wolf Lake	15		10		X	43 km. S. & 24 km. E. of Edson

Table C5
GROUP CAMPGROUNDS

Forest	Name	Shelter	Waterwell
Bow/Crow			
	Evans Thomas	X	
	Highwood River	X	X
	North Fork Group		X
	North Ghost		
	North Ghost Airstrip		
	Paddy's Flat		
	Pine Grove Group	X	X
	River Cove Group	X	X
	Sandy McNabb	X	
	Station Flats		
	Strawberry Group		
	Syncline Group		
	Waiparous	X	X
Rocky/Clearwater			
	Cavalcade		
	Snow Creek		
	Peppers Creek		
	Prairie Creek		

Table C6
NUMBER OF CAMPGROUNDS AND UNITS BY FOREST

(CLASS I, II, III AND GROUP)

Forest	No. of Campgrounds Class I, II, III	No. of Camping Units	No. of Picnic Units	No. of Group Camps	No. of Persons Accommodated in Group Camps
Athabasca	6	36	26	– –	– –
Bow/Crow	49	946	360	13	800
Edson	16	212	33	– –	– –
Footner Lake	5	31	28	– –	– –
Grande Prairie	9	151	33	– –	– –
Lac La Biche	5	131	28	– –	– –
Peace River	3	20	41	– –	– –
Rocky/Clearwater	30	444	144	4	300
Slave Lake	3	57	5	– –	– –
Whitecourt	6	128	39	– –	– –

7. Watershed Management

As a part of a continuing inventory program of precipitation and stream-flow, a data network has been established. A total of 129 precipitation storage gauges and 15 water-level recorders were collecting data in the green area in 1978-79.

Table C7
PRECIPITATION AND STREAM-FLOW NETWORK

Forest	Number of Precipitation Gauges	Frequency of Reading	Number of Water-Level Recorders
Bow/Crow	48	11 monthly 37 semi-annually	3
Edson	11	semi-annually	
Tri-Creeks	7	monthly	
Grande Prairie	15	semi-annually	3
Rocky/Clearwater	22	quarterly 18 semi-annually	3
Slave Lake	9	semi-annually	3
Whitecourt	9	semi-annually	3
Lac La Biche	1	semi-annually	
Footner	4	semi-annually	
Peace River	2	semi-annually	
Athabasca	1	semi-annually	

With the co-operation of the Bow/Crow Forest, one watershed assessment was completed. This was in the headwaters of Hidden Creek. This assessment was carried out in preparation for authorizing timber harvesting operations in the area.

D. FOREST PROTECTION

1. Introduction

The 1978 fire season saw 653 fires burn 7 790 hectares. Seventy-six percent of the total area burned was due to lightning fires, the first time since 1974 that lightning was responsible for more than forty per cent of the fires. Weather patterns in early June and late July kept the fire hazard high but no large fires occurred.

The mountain pine beetle infestation in the Crowsnest area continued to expand. Monitoring, discussion with other agencies and some use of control measures continued. Surveys of aspen defoliation by the forest tent caterpillar and the aspen tortrix indicated heavy infestation from Edson to the Peace River District and east as far as Calling Lake. Patchy infestations occur in the Fort McMurray area. To date, the spruce budworm is causing very little damage.

Table D1
FIRE PERMITS, PROSECUTIONS AND CONVICTIONS DURING THE 1978 FIRE SEASON

Number of Fire Permits Issued:	
Athabasca Forest	57
Bow/Crow Forest	295
Edson Forest	1 313
Footner Lake Forest	3 241
Grande Prairie Forest	3 609
Lac La Biche Forest	1 445
Peace River Forest	4 515
Rocky/Clearwater Forest	1 097
Slave Lake Forest	2 730
Whitecourt Forest	2 993
TOTAL	21 295
Number of Prosecutions:	15
Number of Convictions:	14
Total Fines:	$1 370.00
Total Suppression Costs Added to Fines:	$ 372.61

Table D2
AIRCRAFT REPORT

FIVE-YEAR SUMMARY

All Aircraft	1974 No.	1974 Hour	1975 No.	1975 Hour	1976 No.	1976 Hour	1977 No.	1977 Hour	1978 No.	1978 Hou
Helicopters	70	9 265	36	6 394	40	6 103	47	5 687	72	7 78
Fixed Wing	78	6 257	89	4 370	70	2 764	124	3 828	76	3 68
Air Tankers	18	1 557	11	485	11	1 073	10	658	11	1 02
TOTALS	166	17 079	136	11 249	121	9 940	181	10 173	159	12 49
No. of fires actioned by aircraft	326		230		268		156		283	

Table D3
TOTAL NUMBER OF FIRES AND BURNED OVER AREA

TEN-YEAR SUMMARY

Year	Total Fires	*Non-Forested Hectares	Forested Hectares	Total Area Hectares	Suppressio Costs
1969	556	11 336	17 961	29 297	2 843 994
1970	816	21 550	30 880	52 430	4 535 419
1971	900	46 722	17 673	64 395	5 462 555
1972	737	11 365	37 926	49 291	5 179 163
1973	478	2 074	8 617	10 691	2 377 984
1974	598	2 299	16 105	18 404	5 619 951
1975	693	1 633	4 157	5 790	3 951 032
1976	774	5 313	17 124	22 437	3 681 894
1977	679	6 049	3 982	10 031	1 176 666
1978	653	5 017	2 773	7 790	2 787 901

* Non-forested hectares refers to non-productive forest land and private land.

Table D4
COMPARISON OF FIRE CAUSES BY PERCENTAGES

TEN-YEAR SUMMARY

Cause	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Recreation	12.5	16.5	15.5	14.8	17.2	14.5	26.4	17.6	26.4	19.3
Settlement	13.0	13.8	12.0	11.4	15.3	5.5	11.4	13.4	10.4	7.4
Railroads	1.0	1.8	1.6	1.5	5.6	1.2	2.2	1.4	4.5	3.7
Lightning	42.0	43.4	47.3	43.7	26.6	46.2	29.3	23.8	23.7	42.4
Other Industries	10.0	8.6	4.0	4.3	7.5	4.5	3.2	6.2	9.4	6.0
Forest Industries	5.3	2.4	3.2	1.8	2.5	3.3	3.3	3.6	2.5	0.8
Incendiary	6.3	5.8	6.4	8.5	5.6	6.4	8.5	20.8	9.4	8.0
Public Projects	3.5	2.1	3.7	3.0	1.3	3.3	2.3	1.3	2.3	1.7
Unclassified	5.0	3.3	3.7	5.7	11.3	8.2	10.4	7.5	10.3	8.9
Unknown	1.4	2.3	2.6	5.3	7.1	6.9	3.0	4.4	1.1	2.0

Table D5

STATEMENT OF FIRES BY CAUSE

MONTHLY DISTRIBUTION

FOR 1978

Cause	Number by Class							Monthly Distribution										
	A	B	C	D	E	Total	%	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Recreation	114	9	3	0	0	126	19.3	1	0	1	1	18	30	37	25	3	6	4	0
Forest Industries	2	1	2	0	0	5	0.8	0	0	0	0	1	0	1	1	0	1	0	1
Settlement	14	21	7	6	0	48	7.4	2	0	2	5	20	7	3	4	0	2	3	0
Railroad	3	17	4	0	0	24	3.7	0	0	0	2	14	2	2	1	0	3	0	0
Lightning	140	99	24	7	7	277	42.4	0	0	0	1	19	129	65	62	0	1	0	0
Other Industries	20	18	1	0	0	39	6.0	0	0	2	5	6	9	9	4	0	3	1	0
Incendiary	17	18	11	6	0	52	8.0	0	0	0	5	20	14	2	4	0	6	1	0
Public Projects	4	5	1	1	0	11	1.7	0	0	0	1	1	3	1	0	0	3	2	0
Unclassified	25	27	6	0	0	58	8.9	0	0	0	16	28	3	5	3	1	1	1	0
Unknown	7	4	2	0	0	13	2.0	0	0	0	3	3	0	3	0	0	4	0	0
TOTALS	346	219	61	20	7	653	0.0	3	0	5	39	130	197	128	104	4	30	12	1

Table D6

STATEMENT OF FIRES BY CAUSE, DISCOVERY AGENCY, DAMAGE AND AREA BURNED

FOR 1978

Cause	Discovered by					Damage	Land Area in Hectares		
	Towers	Public	Forest Officers	Aircraft	Other	$	Crown	Private	Total
Recreation	7	36	15	4	64	5 415	35	16	51
Forest Industries	2	0	1	0	2	4 152	30		30
Settlement	10	29	0	6	3	1 570	194	442	636
Railroads	2	15	1	0	6	3 128	35	50	85
Lightning	159	12	3	91	12	1 011 497	5 888	0.50	5 889
Other Industries	7	14	2	6	10	4 324	34	0.50	34
Incendiary	14	27	4	4	3	7 642	641	130	771
Public Projects	1	3	0	0	7	69 210	107	2	109
Unclassified	17	27	2	3	9	6 369	100	28	128
Unknown	3	2	2	1	5	– – –	3	54	57
TOTALS	222	165	30	115	121	1 113 307	7 067	723	7 790
PERCENTAGE	34.0	25.3	4.6	17.6	18.5		90.7	9.3	

Table D7
SUMMARY OF FOREST FIRE LOSSES

FOR 1978

	CLASS OF FIRE						LAND AFFECTED – HECTARES						VOLUME LOSS		SUPPRESSION COSTS
							Crown Lands								
	A	B	C	D	E	Total	Merch. Timber	Potent. Prod.	Non Prod.	Total Crown land	Priv. Area	Total Area	Timber MCF	Other MCF	Total $
Athabasca	28	40	10	3	2	83	388	106	1 339	1 833	0	1 833	55	180	417 506
Bow/Crow	61	2	0	0	0	63	0	0	0	0	1	1	0	0	4 583
Edson	19	26	1	1	0	47	118	4	13	135	14	149	0	0	71 980
Footner Lake	16	32	12	2	1	63	227	18	980	1 225	182	1 407	257	740	683 187
Grande Prairie	24	13	3	1	1	42	195	18	235	448	185	633	266	583	340 442
Lac La Biche	46	33	9	5	3	96	1 144	421	894	2 459	159	2 618	487	2 326	916 964
Peace River	20	14	4	2	0	40	46	1	99	146	37	183	0	0	142 625
Rocky/Clearwater	37	3	2	0	0	42	10	15	3	28	0	28	0	0	35 102
Slave Lake	25	13	6	0	0	44	24	10	3	37	32	69	0	0	73 604
Whitecourt	58	19	4	0	0	81	8	4	10	22	50	72	0	0	27 186
TOTAL FORESTS	334	195	51	14	7	601	2 160	597	3 576	6 333	660	6 993	1 065	3 829	2 713 179
Metis Colony	1	3	2	4	0	10	1	0	434	435	0	435	0	0	35 202
Indian Reserves	4	14	4	2	0	24	5	2	276	283	0	283	0	0	11 500
TOT. Protect. Area	339	212	57	20	7	635	2 166	599	4 286	7 051	660	7 711	1 065	3 829	2 759 881
TOTAL Rural Area	7	7	4	0	0	18	8	0	8	16	63	79	0	0	28 020
GRAND TOTAL	346	219	61	20	7	653	2 174	599	4 294	7 067	723	7 790	1 065	3 829	2 787 901

Other Forest Protection Costs for Fire Control (dollars)	7 727 331
Total Forest Protection Costs for Fire Control (dollars)	10 515 232